REMARKS

Claims 87-93 and 110-113 are pending in the present application. Claims 87-93 have been canceled without prejudice to their presentation in another application. No new matter has been added. Upon entry of the present amendment, claims 110-113 will be pending.

I. Summary of the Claimed Invention

Applicants' invention is directed to, *inter alia*, identification of compounds which modulate, either inhibit or stimulate, biomolecules. Nucleic acids, especially RNA are preferred substrates for such modulation and all such substrates are denominated "targets" for such action. The present methods are particularly powerful in that they provide novel combinations of techniques which give rise to compounds, usually "small" organic compounds, which are highly potent modulators of RNA and other biomolecular activity. Very large numbers of compounds may be tested *in silico* to determine whether they are likely to interact with a molecular interaction site and, hence, modulate the activity of the biomolecule. Pharmaceuticals, veterinary drugs, agricultural chemicals, industrial chemicals, research chemicals and many other beneficial compounds may be identified in accordance with embodiments of this invention. In particular, the present invention relates to identification of molecular interaction sites of interleukin-2 (IL-2).

II. The Claimed Invention Is Useful

Claims 110-113 stand rejected under 35 U.S.C. § 101 as allegedly failing to be supported by a specific, substantial, or a well-established utility. Applicants traverse the rejection and request reconsideration thereof because the claims are supported by specific, substantial, and credible utilities.

The Revised Utility Examination Guidelines require a claimed invention to have a utility that is specific to the subject matter claimed (a "specific utility"). Applicants recite in Table 1 of the specification that IL-2 is an RNA target that plays a role in inflammation. Applicants teach at, for example, pages 117-118, Example 7 of the specification, that such fragments can be used, for

example, in detecting molecules of either natural or man-made origin that bind the molecular interaction site (e.g., the claimed RNA fragment). The oligonucleotides of the invention can also be used as decoys to compete with naturally-occurring molecular interaction sites, for modulating expression, within a cell for research, diagnostic and therapeutic applications. In addition, Applicants teach throughout the specification that such RNA fragments, or molecular interaction sites, can be used to screen libraries of small molecules, oligonucleotides, etc., (either by actual physical screening or by screening *in silico*) in order to identify particular drug candidates. In the present case, the claimed RNA fragment can be used, for example, to screen a library of compounds to identify a compound that inhibits binding of, for example, an inhibitor of translation that normally binds to the 5'- or 3'-UTR of the IL-2 mRNA. Thus, there is no question that Applicants have asserted at least one specific utility and, in fact, have provided numerous specific utilities. Indeed, the specific utilities taught by Applicants are in stark contrast to the examples of the non-specific utilities (e.g., probes and chromosome markers without a specific DNA target) recited in the Revised Utility Examination Guidelines. Thus, Applicants have complied with the specific utility requirement.

The Revised Utility Examination Guidelines also require a claimed invention to have a utility that defines a real-world use (a "substantial utility"). Applicants teach, as described above, that RNA fragments can be used to detect molecules that bind the RNA fragment, can be used as decoys to compete with naturally-occurring molecular interaction sites within a cell for research, diagnostic and therapeutic applications, and can be used to screen libraries of compounds in order to identify particular drug candidates for treating, in the present case, inflammation. Thus, it is clear that such RNA fragments have real-world uses. All these uses are real-world uses and, again, stand in stark contrast to the "throw away" uses (e.g., using transgenic mouse as snake food and using protein as an animal food supplement or shampoo) recited in the Revised Utility Examination Guidelines. Thus, there is no question that Applicants have asserted at least one substantial utility and, in fact, have provided numerous substantial utilities. Accordingly, Applicants have complied with the substantial utility requirement.

In addition to a specific and substantial utility, as Applicants have asserted, the Revised Utility Examination Guidelines require that such utility be credible (a "credible utility"). That is,

whether the assertion of utility is believable to a person of ordinary skill in the art based on the totality of evidence and reasoning provided. Clearly, the numerous specific and substantial utilities asserted by Applicants are credible. Such assertions are credible unless "(A) the logic underlying the assertion is seriously flawed, or (B) the facts upon which the assertion is based is inconsistent with the logic underlying the assertion," *see* Revised Interim Utility Guidelines Training Materials. Further, PTO personnel are reminded that they must treat as true a statement of fact made by Applicants in relation to an asserted utility, unless countervailing evidence can be provided that shows that one of ordinary skill in the art would have a legitimate basis to doubt the credibility of such a statement. Significantly, no such countervailing evidence has been provided. Because Applicants have asserted numerous specific and substantial utilities that are credible, Applicants have complied with the credible utility requirement.

Thus, the claimed methods clearly have a useful, concrete and tangible use and, thus, are patentable subject matter. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 101 be withdrawn.

III. Obviousness-Type Double Patenting

Claims 87-93 and 110-113 were provisionally rejected under the doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 11, 13, 14 and 16 of co-pending Application No. 09/310,735. However, the Examiner stated in the advisory action of @@ that Applicants submission of a terminal disclaimer overcame this rejection. In view of the terminal disclaimer submitted previously and the acceptance thereof, Applicants respectfully request that this rejection be withdrawn.

IV. The Claimed Invention Is Sufficiently Enabled

Claims 110-113 are rejected under 35 U.S.C. §112, first paragraph as allegedly failing to provide utility. As discussed above the specification provides sufficient teaching to those of skill in the art to practice the claimed invention. Further Applicants have pointed to the portions in the specification providing such important teachings. Applicants traverse the rejection and respectfully

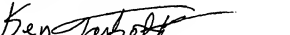
request reconsideration because one skilled in the art would be able to practice the claimed invention without being required to perform undue experimentation.

Thus, there is no reason to believe that one skilled in the art would be required to perform any amount of undue experimentation in order to make and use the claimed invention. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 112, first paragraph be withdrawn.

V. Conclusion

In view of the foregoing, Applicants respectfully submit that the claims are in condition for allowance. An early notice of the same is earnestly solicited. The Examiner is invited to contact Applicants' undersigned representative at (619) 685-1708 if there are any questions regarding Applicants' claimed invention.

Respectfully submitted,



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Enclosure

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